

DEPARTMENT OF LABOR AND INDUSTRIAL RELATIONS
Amendments to Chapters 12-220, 12-221, 12-222, 12-223, 12-224 &
12-225.

Hawaii Administrative Rules

Title 12 Subtitle 8 Part 10 Boiler and Pressure Vessel
Ramseyer Chapters 12-220 to 12-225.

1. Section 12-220-1, Hawaii Revised Statutes is amended to read as follows:

"§12-220-1 Definitions. As used in this part:

~~["A.I." means Authorized Inspector as defined in the National Board Rules & Regulations 1994 Section 3.5.]~~

"A.I.A." means Authorized Inspection Agency as defined by the National Board in the ~~[National Board Rules & Regulations 1995 Section 3.2.]~~ "Criteria for Acceptance of Authorized Inspection Agencies for New Construction," NB-360, or "Qualifications and Duties for Authorized Inspection Agencies Performing Inservice Inspection Activities and Qualifications for Inspectors of Boilers and Pressure Vessels," NB-369.

"Alteration" means a change in any item described on the original Manufacturer's Data Report or specification other than maintenance, repair, or replacement; additional mechanical tests are required.

"ANSI" means the American National Standards Institute.

"ASME B31.1" means ~~[ASME B31.1-1998, Power Piping.]~~ ASME B31.1-2010, Power Piping.

"ASME PVHO 1" means ~~[ASME PVHO 1-1993, Safety Standard for Pressure Vessels for Human Occupancy and PVHO 1C-1996 Addenda.]~~ ASME PVHO 1-2002, Safety Standards for Pressure Vessels for Human Occupancy.

"Appeals board" means the labor and industrial relations appeals board, department of labor and industrial relations.

"Application" means a written request for approval required by law to be obtained prior to the installation, operation, or repair or alteration of a boiler, pressure vessel, or pressure system.

"Approved" means approved by the department.

"Appurtenance" means a device installed on and used in the normal operation of a boiler or pressure vessel.

"ASME Code" means the Boiler and Pressure Vessel Code of the American Society of Mechanical Engineers, ~~[1998 and 1999 Addenda.]~~ 2010 ASME Boiler and Pressure Vessel Code.

"ASME CSD-1" means controls and safety devices for automatically fired boilers of the American Society of Mechanical Engineers ~~[1998.]~~ 2006.

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"Attorney general" means the attorney general of the State of Hawaii or any of the attorney general's deputies.

"Authorized inspection agency" means:

- (1) The department of labor and industrial relations, boiler and elevator inspection [~~bureau; or~~]
branch;
- (2) An insurance company which has been licensed or registered by the appropriate authority of the State to write boiler and pressure vessel Insurance and does write and provide inspection service of boilers and pressure vessels[-]; or
- (3) A company qualified by the National Board of Boiler & Pressure Vessel Inspectors as an accredited authorized inspection agency.

"Boiler" means a closed vessel in which water is heated, steam is generated, steam is superheated, or any combination thereof, under pressure for use external to itself, by the direct application of heat, and includes fired units for heating or vaporizing liquids other than water where these units are separate from processing systems and complete within themselves:

- (1) "Power boiler" means a boiler in which steam or other vapor is generated at a pressure of more than 15 psig (103 kPa gage) for use external to itself.
- (2) "High-temperature water boiler" means a water or other liquid boiler intended for operation at pressures in excess of 160 psig (1100 kPa gage) or temperatures in excess of 250° F (121° C), or both.
- (3) "Thermal fluid boiler" means a fluid heater intended for heating a fluid to be circulated externally to itself for the purpose of energy transfer.
- (4) "Heating boiler" means a steam or vapor boiler operating at pressures not exceeding 15 psig (103 kPa gage) or a hot water boiler operating at pressures not exceeding 160 psig (1100 kPa gage) or temperatures not exceeding 250° F (121° C) which include steam heating, hot water heating, and hot water supply boilers:

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- (A) "Steam heating boiler" means a steam boiler for operation at pressures not exceeding 15 psig (103 kPa gage);
 - (B) "Hot water heating boiler" means a boiler in which no steam is generated, from which hot water is circulated for heating purposes and returned to the boiler, and which operates at a pressure not exceeding 160 psig (1100 kPa gage) or a temperature of 250° F (121° C) or both at or near the boiler outlet; [and]
 - (C) "Hot water supply boiler" means a boiler completely filled with water that furnishes hot water to be used externally to itself at pressures not exceeding 160 psig (1100 kPa gage) or at temperatures not exceeding 250° F (121° C) at or near the boiler outlet[-]; and
 - (D) "Pool heater" means a boiler in which no steam is generated, from which hot water is circulated to a swimming pool, hot tub, or spa and returned to the boiler, and which operates at a pressure not exceeding 160 psig (1100 kPa gage) or a temperature not exceeding 250 degrees F (121 degrees C).
- (5) "Electric boiler" means a power boiler or heating boiler in which the source of heat is electricity.
- (6) "Miniature boiler" means a power boiler or high temperature water boiler which does not exceed any one of these limits:
- (A) Sixteen inches [~~(410 mm)~~] (400 mm) inside diameter of shell;
 - (B) Twenty square feet (1.9 m²) heating surface (not applicable to electric boilers);
 - (C) Five cubic feet (140 liters) gross volume exclusive of casing and insulation; and
 - (D) One hundred psig [~~(690 kPa gage)~~] (700 kPa gage) maximum allowable working pressure.
- (7) "Waste heat boiler or unfired steam boiler" means an unfired pressure vessel or system of unfired pressure vessels intended for operation in excess of 15 psig steam for the purpose of producing and controlling an output of thermal energy.

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- (8) "Heat recovery boiler" means a vessel or system of vessels comprised of one or more heat exchanger surfaces used for the recovery of waste heat.
- (9) "Portable boiler" means a boiler which is primarily intended for temporary location and the construction and usage permits it to be readily moved from one location to another.

"Certified individual" means an individual authorized to provide oversight in an ASME authorized manufacturer's quality control program. Such individual may also serve as the Certificate Holder's authorized representative responsible for signing data reports or certificates of conformance.

"Certificate of competency" means a certificate issued to a person who has passed the examination prescribed by the director.

"Commission, National Board" means the commission issued by the National board to a holder of a certificate of competency.

"Condemned boiler or pressure vessel" means a boiler or pressure vessel that has been inspected and declared unsafe or disqualified by legal requirements by an inspector and a stamping or marking designating its condemnation has been applied by the inspector.

"Contractor" means any person, firm, or corporation installing, repairing, or servicing and responsible for the safe operation of any boiler, pressure vessel, or pressure system, inspected pursuant to chapter 397, HRS.

"Department" or "DLIR" means the department of labor and industrial relations, State of Hawaii.

"Director" means the director of the department of labor and industrial relations or the director's designee.

"Discrepancy" means the non-conformance of an item, unit, or part to codes, standards, rules, or regulations required by part 10 of this subtitle which the owner, user, or contractor could not have had knowledge.

"Division" [~~or "HIOSH"~~] means the Hawaii occupational safety and health division, department of labor and industrial relations, State of Hawaii.

"Existing installation" means any boiler or pressure vessel constructed, installed, placed in operation, or contracted for before the effective date of these rules.

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"Factor of safety" is the number by which a given permissible force, or load, value can be multiplied before the boiler or pressure vessel reaches its ultimate design strength value.

"Fired" means the application of heat from the combustion of gaseous, liquid, or solid fuels; from electricity; or from nuclear sources which includes direct or indirect fired:

- (1) "Direct" means the primary application of heat.
- (2) "Indirect" means other than the primary application of heat.

"Fuel" means any matter consumed to produce heat.

"Hawaii Revised Statutes" or "HRS" means laws enacted by the Hawaii State Legislature.

"Heat" means thermal energy in transition by radiation, conduction, convection, or any combination of these.

"Inspector" means the chief inspector, deputy inspector, special inspector, or owner-user inspector holding a valid certificate of competency issued by the department:

- (1) "Chief inspector" means the appointed chief boiler and pressure vessel inspector;
- (2) [~~"Inspector"~~] "Deputy inspector" means any boiler inspector appointed by the director and employed by the department;
- (3) "Special inspector" means an inspector holding a State of Hawaii, certificate of competency and who is regularly employed by an insurance company authorized to insure boilers or pressure vessels in this State[+]or, a company qualified by the National Board of Boiler & Pressure Vessel Inspectors as an accredited authorized inspection agency; and
- (4) "Owner-user inspector" means an inspector who holds a valid National Board Owner-User Commission who has passed the examination prescribed by the director and who is continuously employed as an inspector by an owner-user inspection agency.

"Jurisdiction" means a state, commonwealth, county, or municipality of the United States or a province of Canada which has adopted one or more sections of the ASME Code, one

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of which is Section I, and maintains a duly constituted department, bureau, or division for the purpose of enforcement of this code.

"Lined potable water heater" means a water heater with a corrosion resistant lining used to supply potable hot water.

"May" means permissive.

"National Board" means the National Board of Boiler and Pressure Vessel Inspectors, 1055 Crupper Avenue, Columbus, Ohio 43229, whose membership is comprised of the chief inspectors of jurisdictions who are charged with the enforcement of the provisions of the ASME Code.

"National Board Inspection Code" means the National Board Inspection Code[, ~~ANSI/NB-23, 1998 and 1998 Addenda.~~] 2011.

"NBEP" means Non-boiler external piping.

"NBEP Certificate" means a certificate issued by the department to a company that is considered to be qualified to design and fabricate the non-boiler external piping. The certificate limits the design pressure to 150 psi and the pipe size to 3 inches in diameter. The provisions of ASME B31.1 shall apply.

"New boiler or pressure vessel installation" means all boilers or pressure vessels constructed, installed, placed in operation, or contracted for after the effective date of these standards and codes.

"NFPA" means the National Fire Protection Association.

~~"NFPA 70" means NFPA 70-1996, National Electrical Code.~~

"Nonstandard boiler or pressure vessel" means a boiler or pressure vessel that does not bear the ASME symbol.

"Nuclear power plant" means a plant consisting of one or more nuclear power and containment systems.

"Nuclear power system" means a system which serves the purpose of producing and controlling an output of thermal energy from nuclear fuel and those associated systems essential to the functions of the power system; the components of the system include such items as pressure vessels, piping system, pumps, valves, and storage tanks.

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"Operating permit" means a permit issued by the department authorizing the operation of a boiler or pressure vessel or pressure system.

"Order" means a command to perform a mandatory act issued by the department.

"Owner" means any person, firm, or corporation with legal title to any boiler, pressure vessel or pressure system, inspected pursuant to chapter 397, HRS, who may or may not be the user.

"Owner-user inspection agency" means an owner or user of boilers, pressure vessels and pressure system who maintains a regularly established inspection department, whose organization and inspection procedures meet the requirements of the National Board rules and are acceptable to the department.

"Permit-inspection" means an inspection, the report of which is used by the department as justification for issuing, withholding, or revoking the operating permit which includes internal and external inspections.

- (1) "Internal inspection" means as complete an examination as can reasonably be made to the internal and external surfaces of a boiler or pressure vessel while it is shut down, and manhole plates or handhole covers, or other inspection opening closures, are removed as required by the inspector.
- (2) "External inspection" means an inspection made when a boiler or pressure vessel is in operation, when the controls, safety devices, and pressure containing components are examined.

"Pool heater" means a boiler in which no steam is generated, from which hot water is circulated to a swimming pool, hot tub, or spa and returned to the boiler, and which operates at a pressure not exceeding 160 psig (1100 kPa gage) or a temperature not exceeding 250 degrees F (121 degrees C).

"Pressure piping" means piping systems specified in [ASME B31.1-1995 and B31.1(b) 1996 Addenda.] ASME B31.1-2010, Power Piping.

"Pressure system" means a system composed of unfired pressure vessels and piping components for liquid or vapor distribution at a pressure of more than 15 psi or a temperature

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in excess of 250° F, or both, that includes but is not limited to a bank of pressure vessels connected without any intervening valves.

"Pressure vessel" means a closed vessel in which the pressure is obtained from an external source, or by the application of heat from an indirect source, or from a direct source, other than those vessels defined as boilers in this section which includes fired and unfired pressure vessels.

- (1) "Fired pressure vessel" means a closed vessel in which steam is generated for use within itself by the direct or indirect application of heat.
- (2) "Unfired pressure vessel" means a closed vessel in which pressure is obtained from an external source.

"Psig" means pounds per square inch gage.

"Reinstalled boiler or pressure vessel" means a boiler or pressure vessel removed from its original setting and reinstalled at the same location or at a new location without change of ownership.

"Relief valve" means an automatic pressure relieving device, used primarily for liquid service, actuated by the static pressure upstream of the valve which opens further with the increase in pressure over the opening pressure.

"Repair" means the work necessary to restore a boiler or pressure vessel to a safe and satisfactory operating condition, provided there is no deviation from the original design.

"Safety-relief valve" means an automatic, pressure-actuated relieving device suitable for use either as a safety valve or relief valve depending on application.

"Safety valve" means an automatic pressure relieving device, used for gas or vapor service, actuated by the static pressure upstream of the valve, and characterized by full-opening pop action.

"School" means an institution of learning, which includes pre-schools, elementary schools, intermediate or middle schools, and high schools.

"Second-hand boiler or pressure vessel or used boiler or pressure vessel" means a boiler or pressure vessel which has changed both location and ownership since primary use.

"Shall" means mandatory.

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"Standard boiler or pressure vessel" means a boiler or pressure vessel which bears both the ASME symbol and National Board number.

"State special" means any non-code boiler or pressure vessel objects, including water heaters and kettles, which contain steam, hot water, or air greater than 15 psi, and are located or installed on school property.

"Unfired" means the application of pressure or heat that is obtained from an external source.

"User" means any person, firm, or corporation legally in possession and responsible for the safe operation of any boiler, pressure vessel, or pressure system inspected pursuant to chapter 397, HRS.

"Vendor" means any person, firm, or corporation that sells or distributes any boiler, pressure vessel or pressure system required to be inspected pursuant to chapter 397, HRS.

"Violation" means non-conformance of an item, unit, or part to codes, standards, rules, or regulations required by this subtitle.

"Water heater" means a closed vessel in which water is heated by the combustion of fuels or by electricity, or by any other source, and withdrawn for use external to the system at pressure not exceeding 160 psig (1100 kPa gage), or a heat input of 200,000 btu per hour and shall include all controls and devices necessary to prevent water temperature from exceeding 210° F (99° C).

"Welding documentation" means welding procedure specifications, procedure qualification records, records of welder or welding operator performance qualification, and reports of welded repairs or alterations. [Eff 12/6/82; am 12/19/83 am 12/8/86; am and comp 12/6/90; am 7/6/98; am 6/19/00; am _____]
(Auth: HRS §397-4) (Imp: HRS §397-4)

2. Section 12-220-8 is amended to read as follows:

"§12-220-8 Repairs and alterations. (a) When repairs and alterations are to be made, the requirements of the National Board Inspection Code shall apply. Applications for

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authorization for repair/alteration shall be filed in the prescribed form along with the applicable fee per section 12-220-35 table 220-1 with the department prior to commencement of work. A complete application shall include name of the applicant, address, telephone number, "R" stamp number and expiration date. A copy of the manufacturer's data report form shall be submitted along with drawings of the proposed alteration, calculations, materials, procedures, new maximum allowable working pressure and temperature. The type of equipment shall be identified with pertinent information such as, power boiler, heating boiler or pressure vessel number, National Board number, name of manufacturer and year built. Incomplete, illegible or applications with insufficient data shall not be considered for approval.

(b) It is a requirement of the department that the holder of a National Board Repair Symbol shall have in force at all times a valid inspection contract or agreement with an authorized inspection agency that employs authorized inspectors as defined in the National Board Inspection Code Part [RA.]3.

(c) It shall be the responsibility of the organization making the repair or alteration to provide for inspection, documentation, and certification of the work. The inspection agency responsible for inservice inspection of the boiler or pressure vessel shall have access to review the repair procedures.

(d) The R-1, R-2 [or], R-3 or R-4 form, as applicable, shall be submitted to the department as soon as possible, following the completion of the repairs or alterations but no later than thirty days. The drawings, design-calculations, NDE records, the checklists and other pertinent documents shall be kept for a period of five years.

(e) When repairs, alterations or installations of non-boiler external piping are to be made, an ASME or the National Board stamps are not mandatory. An applicant whose quality control program has been approved and who has been issued an NBEP certificate by the department, may be eligible to conduct such activity.

(f) Prior to commencement of repairs, alterations or installations of non-boiler external piping the holder of the NBEP certificate shall submit an application on the prescribed form along with the necessary fee per section 12-220-35 table 220-1 for authorization to conduct such

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activity." [Eff 12/6/82; am 12/8/86; am and ren §12-220-8
and comp 12/6/90; am 7/6/98; am 6/19/00; am _____]
(Auth: HRS §397-4) (Imp: HRS §397-4)

3. Section 12-220-11 is amended to read as follows:

§12-220-11 Requirements for new installations. (a) The new installations shall require filing of an application for installation permit prior to the commencement of work. A complete application shall include date of application, project name and address besides name and address of installer, type of license held and expiration date. The contact person and phone number shall be specified. The applicable fees per section 12-220-35, Table 220-1, also indicated on the application form, shall accompany the request. The National Board number shall be filled in appropriately for each vessel to be installed. If the National Board number is missing from the name plate the department shall be notified for assistance and corrective measure. No boiler or pressure vessel shall hereafter be installed in the State unless it has been constructed in conformity with the ASME Code, registered with the National Board, and installed in conformity with this chapter except:

- (1) Those exempt by chapter 397, HRS;
- (2) Those outlined in section 12-220-2(b);
- (3) Boilers and pressure vessels under federal inspection and control;
- (4) Unfired pressure vessels meeting the requirements of the United States Department of Transportation and used for transporting liquids or gases under pressure;
- (5) Unfired pressure vessels with a nominal water containing capacity of 120 gallons or less for containing liquid under pressure, including those containing air, the compression of which serves only as a cushion;
- (6) Hot water supply boilers and hot water heating boilers which are directly fired with oil, gas, or electricity when none of these limitations are exceeded:
 - (A) A heat input of 200,000 Btu per hour;

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- (B) A water temperature of 210°F; and
 - (C) A nominal water containing capacity of 120 gallons except that hot water supply boilers shall be equipped with a proper size, type, and capacity safety-relief valve as set forth in section IV of the ASME Code;
 - (D) An operating pressure not exceeding 160 PSI.
- (7) Unfired pressure vessels designed for a pressure not exceeding 15 psi;
- (8) Pressure vessels not exceeding:
- (A) Five cubic feet in volume and 250 psi design pressure;
 - (B) Three cubic feet in volume and 350 psi design pressure;
 - (C) One and one-half cubic feet in volume and 600 psi design pressure; or
 - (D) An inside diameter of 6 inches with no limitation on pressure;
- (9) Containers for storage of liquified compressed flammable gases under the jurisdiction of other agencies;
- (10) Unfired pressure vessels containing water and filtering material for use in irrigation of land;
- (11) Unfired pressure vessels for the storage of cold water;
- (12) Electrically heated sterilizers or steam cookers when neither of these limitations is exceeded:
- (A) Heat input of 3.0 KW; or
 - (B) A volume of 1.5 cubic feet.
- (b) The stamping done in accordance with section 12-220-31 shall not be concealed by lagging or paint and shall be exposed at all times unless a suitable record is kept of the location of the stamping so that it may be readily uncovered at any time." [Eff 12/6/82; am 12/8/86; am and ren §12-220-11 and comp 12/6/90; am 7/6/98; am 6/19/00; am _____] (Auth: HRS §397-4) (Imp: HRS §397-4)

4. Section 12-220-12 is amended to read as follows:

"§12-220-12 Care of boiler and pressure vessel spaces.

- (a) The boiler and pressure vessel spaces shall be free from

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accumulation of rubbish and materials that may obstruct access to the boiler, pressure vessel, or appurtenance. The clearances identical to those required for new installations under Section 12-220-11 shall be maintained at all times for all types of pressure retaining items.

(b) The storage of flammable material or fuel-powered equipment in the boiler room is prohibited." [Eff. 12/19/84; ren §12-220-12 and comp 12/6/90; am _____] (Auth: HRS §397-4) (Imp: HRS §397-4)

5. Section 12-220-13 is amended to read as follows:

"§12-220-13 Conditions not treated in this part. For any conditions not treated in this part, the applicable provisions of the ASME Boiler and Pressure Vessel Code, ASME B31.1[7]and the National Board Inspection Code[, ~~ASNT Recommended practice No. SNT-TC-1A-1992 Ed or ASNT Standard for Qualification and Certification of Nondestructive Testing Personnel (ASNT-CP-189)~~] shall apply. The American Petroleum Institute Pressure Vessels Inspection Code, API-510, shall not take precedence over the safety standards of this part or any reference codes. However, variances may be granted in accordance with section 12-220-34." [Eff. 12/6/82; am 12/8/86; am and ren §12-220-13 and comp 12/6/90; 7/6/98; am _____] (Auth: HRS §397-4) (Imp: HRS §397-4)

6. Section 12-220-15 is amended to read as follows:

"§12-220-15 Permits. (a) An installation permit shall be issued by the department based on the approval of drawings and specifications pertaining to the installation of boilers, pressure vessels or pressure system. Operating permits shall be issued on the basis of the report of the acceptance inspection and each permit inspection.

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(b) No person shall install, construct, reconstruct, or relocate any boiler, pressure vessel or pressure system without first obtaining an installation permit from the department.

(1) The plans and specifications for installation of boilers, pressure vessels, or pressure systems together with such details as are pertinent to the installation shall be submitted to the department before any work is begun on the installation. Plans shall be resubmitted for any project on which the installation has not commenced within three years of the plan approval date. Copies of engineering data, tests, manufacturer's data reports and laboratory reports, and any other pertinent information deemed necessary by the department shall be submitted by the installer on any new equipment or appurtenance to be installed for the first time in the State of Hawaii.

(2) An installation permit as required under subsection (a) shall be issued only to a person who is licensed to engage in the business of installing or repairing boilers, pressure vessels, or pressure systems by the contractors license board of the department of commerce and consumer affairs, State of Hawaii. All installation permit applications shall be deemed approved if not acted upon by the department within thirty calendar days from the date of receipt of the completed application.

(A) All repairs and alterations performed on boilers, pressure vessels, pressure systems, and boiler external piping shall be reported to the department within thirty calendar days.

(B) The contractor authorized by the department shall be responsible for furnishing to the department all documentation required and referenced in the standards and codes adopted by the department for construction, repair, or alteration of any boiler, pressure vessel, or pressure system.

(3) The department shall, before issuance of a permit for installing, constructing, reconstructing, or relocating as required under subsection (a) above,

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charge and collect a fee for each permit in accordance with the schedule in tables 220-1 and 220-2 in section 12-220-35.

- (c) The department shall issue a "permit to operate" for any boiler, pressure vessel, or pressure system required by these rules and inspected by an inspector employed by the department and found to be safe and in compliance with this subtitle. It shall be unlawful for any person, firm, association, partnership, or corporation to operate a boiler, pressure vessel, or pressure system regulated by this chapter unless a permit for the operation has been authorized by the department and the permit remains in effect.
- (1) A permit to operate a boiler, pressure vessel, or pressure system shall be issued to the owner or lessee only after an inspector has found that the device has met all requirements of this chapter.
 - (2) A valid permit may be extended for cause by the department if so requested in writing by the owner or lessee.
 - (3) The permit to operate shall indicate the type of equipment for which it is issued. ~~[In the case of boilers, pressure vessels, and pressure systems, it shall state whether it is a power boiler, hot water supply boiler, or heating boiler. In the case of pressure vessels, whether it is hot water or compressed air.]~~ These permits shall also indicate the maximum allowable working pressure and the national board number. The permit to operate shall be posted ~~[conspicuously near the equipment.]~~ in a conspicuous location.
 - (4) The department may immediately revoke any "permit to operate" for any equipment, required to be inspected by this chapter, found to be in an unsafe condition or when a user, owner, or contractor ignores department orders to correct specific defects or hazards and continues to use or operate the above mentioned apparatus without abating the hazards or defects.
 - (5) The department shall re-issue a "permit to operate" to any user, owner, or contractor who demonstrates good

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faith in proceeding to abate all nonconforming conditions specified in department orders provided the boilers, pressure vessels, or pressure systems are safe to operate.

- (6) A "permit to operate" shall be valid only at the location for which it was issued except for boilers or pressure vessels which are indicated on the permit as being portable.
- (7) No boiler, pressure vessel, or pressure system which is required to be inspected by chapter 397, HRS, or by any rule adopted pursuant to chapter 91, HRS, shall be operated except as necessary to install, repair, or test unless a permit to operate or certificate of inspection has been authorized or issued by the department and remains valid. Boilers not in use for a period of one year or more, for any reason, shall be inspected internally and externally before being placed into operation.
- (8) The department may, upon the application of any owner or user or any other person affected thereby, grant a reasonable period of time as may be necessary for compliance with any order. Any person affected by an order may for cause petition the department for an extension of time.

(d) The department shall issue a repair or alteration permit only to holders of a current R certificate of authorization from the National Board or holders of a current NBEP certificate of authorization from the department and subject to compliance with 12-220-8. All applications for alteration and repair permits shall be deemed approved if not acted upon by the department within fifteen calendar days from the date of the receipt of application." [Eff 12/6/82; am 12/8/86; am and ren §12-220-11 and comp 12/6/90; am 7/6/98; am 6/19/00; am _____] (Auth: HRS §397-4) (Imp: HRS §397-4)

7. Section 12-220-16 is amended to read as follows:

"§12-220-16 Inspections and tests. (a) The department shall inspect to insure compliance with chapter 397, HRS, any

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activity related to the erection, construction, alteration, repair, or maintenance of facilities containing boilers, pressure vessels, or pressure systems. The department may authorize special inspectors in the employ of a company qualified by the National Board of Boiler & Pressure Vessel Inspectors as an accredited A.I.A., or employed by insurance companies who shall inspect boilers and pressure vessels insured by the insurance companies[.]; provided that the first data inspections shall be performed by a deputy inspector on all new installations. All equipment required by this section to be inspected is exempt from the requirements of this chapter, if under the jurisdiction of the United States government or if serving only a private residence and not accessible to the general public except where the location could affect persons other than the owner or owners and meet the requirements of section 12-220-11 (a).

(b) All inspections and witnessing of tests for boilers, pressure vessels, and pressure systems as required pursuant to this chapter, shall be made in conformance with the procedures set forth in the ASME Code, the National Board Inspection Code, and this chapter. Where notations of discrepancies, recommendations, or requirements are made, these notations shall refer to the applicable rule of the ASME Code, the National Board Inspection Code, and this chapter.

(c) Power boilers shall receive a permit following an annual internal inspection. An external inspection shall be performed approximately six months after each internal inspection.

(d) Miniature electric boilers shall receive a permit inspection biennially. An internal inspection shall be performed when deemed necessary by the inspector.

(e) Heating boilers shall receive a permit inspection ~~[biennially.]~~ as follows:

- (1) Steam or vapor boilers shall have an external inspection and an internal inspection every two years where construction permits.
- (2) Steam or vapor boilers with a heating surface greater than twenty five square feet and less than or equal to one hundred square feet shall be internally inspected at least every four years.
- (3) Steam or vapor boilers with any one of the following criteria: a manway, a Btu input greater than 400,000,

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or a heating surface greater than one hundred square feet, shall be internally inspected annually and permitted annually.

- (4) Hot water heating and hot water supply boilers shall have an external inspection every two years and, where construction permits, an internal inspection at the discretion of the inspector.
- (5) Pool heaters shall have an external inspection every four years.
- (6) All non-code boilers and water heaters installed or operated in schools shall be externally inspected every two years and shall comply with the installation requirements of section 12-220-11. These objects are designated as "state specials" and shall be issued a "permit to operate". A processing fee will be assessed for the inspection of these objects.

(f) [~~Except as provided for in paragraphs (1) and (2) below, power boilers shall receive a permit inspection every year followed by an external inspection approximately six months later. Heating boilers shall receive a permit inspection every two years and pressure~~ Pressure vessels shall receive a permit inspection [up to every four years.] as follows:

- (1) Unfired jacketed steam kettles or steam chambers receiving steam from an external source exceeding five cubic feet in volume shall receive a permit inspection every two years.
- (2) All non-code pressure vessels installed or operated in schools shall be externally inspected every two years and shall comply with the installation requirements of section 12-220-11. These objects will be designated as "state specials" and be issued a "permit to operate." Only a processing fee will be assessed for the inspection of these objects.
- (3) An internal inspection shall be performed when deemed necessary for continued safety by the inspector.
- (4) Pressure vessels used for the treatment of wood shall be scrubbed clean for close visual inspection every ten years.
- (g) Boilers and pressure vessels that are under the

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supervision of an owner-user inspection agency shall be inspected in accordance with the National Board Inspection Code.

(h) Nuclear power plants that are included in chapter 397, HRS, shall be inspected as provided by section XI of the ASME Code.

(i) Based upon documentation of actual service conditions by the owner or user of the operating equipment, the department may, at its discretion, permit variations in the inspection frequency requirements.

(j) Power boilers having continuous internal water treatment under the general supervision of a qualified engineer or chemist, having a minimum of five years experience in the treatment of boiler water, at least one year of which shall have been on the boiler or boilers in question, where the water treatment is for the purpose of controlling and limiting serious corrosion and other deteriorating factors may, upon approval of the director, be given a permit inspection at intervals of not more than ~~[two]~~ three years, in which case ~~[three]~~ external inspections shall be performed at approximately ~~[equal]~~ six-month intervals between the internal inspections.

- (1) The owner of a boiler shall keep an accurate record which will show that the samples of boiler water have been taken at regular intervals not greater than twenty four hours of operation, and the records shall show that the water conditions in the boiler meet the controlling and limiting factors mentioned in this section in accordance with the standards and codes approved by the department. The owner or user of boilers shall also keep a record of the date and actual time that boilers were out of service and the reasons therefore. All records mentioned in this section are to be made available by the owner of boilers to the inspector for examination.
- (2) When a biennial inspection is desired by a boiler owner, a written application for consideration shall be made to the department. The application shall contain, in sufficient detail, the following information:
 - (A) Use of boiler;

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- (B) Boiler data, name of manufacturer, and all identifying numbers;
 - (C) Name and pertinent qualifications of the qualified engineer or chemist in charge of water treatment;
 - (D) The laboratory facilities for testing and analyzing boiler water;
 - (E) The boiler water analysis standards established and achieved over the preceding twelve months period;
 - (F) Method and frequency of sampling water;
 - (G) Percentage of makeup water;
 - (H) Record of boiler outages occurring since the last internal inspection; and
 - (I) Report from a special or deputy inspector relative to acceptability of the boiler for biennial inspection.
- (3) On approval of the application by the department, the expiration date of the current annual operating permit shall be extended for a period of one year. Subsequent permits shall be issued to expire annually and may be extended for not more than one year provided the boiler reports submitted to the department, at periods as shall be required, indicate that the approved standards and codes are being maintained and provided that all other conditions are being met.
- (k) Notification of unsafe boilers, pressure vessels, and pressure systems.
- (1) If a special inspector, upon first inspection of a new risk, finds that a boiler, pressure vessel, or pressure system, or any appurtenance thereof, is in such condition that the insurance company would refuse insurance, the company shall immediately notify the department.
 - (2) If, upon inspection, a special inspector finds a boiler, pressure vessel, or pressure system to be unsafe for further operation, the special inspector shall promptly notify the owner or user, stating what repairs or other corrective measures are required to bring the object into compliance with these rules. Unless the owner or user makes

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repairs or adopts other corrective measures promptly, the special inspector shall immediately notify the department. Unless corrections have been made, no further operation of the boiler, pressure vessel, or pressure system involved shall be permitted. If an operating permit for the object is required and is in force, it shall be suspended by the special inspector. When reinspection establishes that the necessary repairs have been made or corrective actions have been taken and that the boiler, pressure vessel, or pressure system is safe to operate, the department shall be notified and an operating permit will be issued by the special inspector.

(l) Defective conditions disclosed at time of inspection. If, upon an inspection, there is evidence of a leak or crack, adequate access shall be provided to permit the inspector to satisfactorily determine the safety of the boiler, pressure vessel, or pressure system.

(m) Notification of inspection. Permit inspections, as required in section 12-220-16, shall be carried out prior to the expiration date of the certificate at a time mutually agreeable to the inspector and owner or user. External inspections may be performed by the inspector during reasonable hours and without prior notification. When, as a result of external inspection or determination by other objective means, it is the inspector's opinion that continued operation of the boiler or pressure vessel constitutes a danger to personnel or property, the inspector may request an internal inspection or an appropriate pressure test, or both, to evaluate conditions. In these instances the owner or user shall prepare the boiler, pressure vessel, or pressure system for inspections or tests as the inspector designates.

(n) Submission of inspection reports.

(1) Inspectors shall submit to the department an inspection report on Form NB-5 of the National Boiler Inspection Code or similar forms approved by the department for each boiler and pressure vessel subject to inspection in Hawaii. Complete data shall be submitted for each state special boiler, pressure vessel, or pressure system.

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- (2) Subsequent inspections by deputy inspectors, owner-user inspectors, and special inspectors of both standard and non-standard boilers, pressure vessels, and pressure systems shall be reported on Forms NB-6 and NB-7 of the National Board Inspection Code or similar forms approved by the department.
 - (3) Inspection reports following the requirements of subsections (a) and (b) above shall be submitted within thirty days from the date of the inspection.
 - (4) Owner-user inspection agencies shall report in accordance with this subsection or upon forms acceptable to the department, and the report shall be filed as provided in section 12-220-19.
- (o) Notification by insurance companies. All insurance companies shall notify the department within thirty days of all boilers, pressure vessels, or pressure systems on which insurance is written, canceled, or not renewed.
- (p) Procedure for follow-up inspections by special inspectors.
- (1) If during a routine inspection a pressure retaining item is found to have discrepancies, the length of time for temporary use of such item will be at the discretion of the inspector but no more than 90 days. A follow up inspection shall be made by the special inspector in a timely manner and the department notified. The discrepant safety devices that can lead to catastrophic failure causing potential damage to the property or cause serious injuries or death shall be immediately replaced or the operation of the pressure retaining item suspended.
 - (2) Follow-up inspections not performed by the special inspector within the time period prescribed may be conducted by this department and such authorized inspection agency will be invoiced at \$100 per hour with a minimum of 2 hours charged."

[Eff 12/6/82; am 12/8/86; am and ren §12-220-11 and comp 12/6/90; am 7/6/98 am 6/19/00; am _____] (Auth: HRS §397-4) (Imp: HRS §397-4)

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8. Section 12-220-18 is amended to read as follows:

"§12-220-18 Inspectors. (a) Boiler inspectors.

- (1) Required inspections of boilers, pressure vessels, and pressure systems shall be performed by boiler inspectors in the employ of the department who are qualified boiler inspectors or may be performed by special inspectors who are qualified boiler inspectors, in the employ of insurance companies ~~[who meet the requirements of the National Board for insuring boilers or pressure vessels in Hawaii.]~~ or a company qualified by the National Board as an accredited authorized inspection agency. Boilers, pressure vessels, and pressure systems owned by an owner user inspection agency may be inspected by qualified inspectors employed by such inspection agency.
- (2) A qualified boiler inspector is a person in possession of a valid commission issued by the National Board and who has received instructions regarding rules and regulations pertaining to boilers, pressure vessels, and pressure systems in Hawaii from the director or authorized representative.
- (3) On application and payment of the fee set forth in table 220-2 in section 12-220-35 ~~[by an insurance company insuring boilers or pressure vessels in Hawaii, or by an owner-user inspection agency, on behalf of an employee holding a National Board commission, an identifying certificate of competency as a special inspector in Hawaii will be issued after the employee has appeared before the director or authorized representative.]~~ a certificate of competency may be issued to individuals holding a current National Board commission and employed by one of the following:
 - (A) An insurance company insuring boilers and pressure vessels in Hawaii;

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- (B) A company qualified by the National Board of Boiler & Pressure Vessel Inspectors as an accredited authorized inspection agency; or
- (C) An owner-user inspection agency accredited by the National Board.

The Certificate of Competency will be issued after the employee has appeared before the director or authorized representative.

- (4) The certificate of competency, unless suspended, revoked, or canceled, shall expire [~~on December 31 of the~~] one year from the date of issue or renewal. [~~It may be renewed within ninety days after expiration, without examination, upon application to the department, the showing of a current National Board commission, and the payment of the renewal fee set forth in table 220-2, in section 12-220-35.~~]
- (5) The company employing these special inspectors shall notify the department when the employment of the special inspector is terminated.
- (6) A National Board examination for certificates of competency to inspect boilers and pressure vessels shall be administered by the department on the first Wednesday [~~and Thursday~~] of March, June, September, and December of each year.
 - (A) Applicants shall have [~~a high school education, or the equivalent, and have~~] at least [~~three~~] five years of experience at a journeyman level, or the equivalent, in boiler or pressure vessel construction or repair or operating engineer in charge of high pressure boilers or inspector of steam boilers or pressure vessels. [A] An associate degree in mechanical engineering from a curriculum accredited by the Accreditation Board for Engineering and Technology college or university shall be the equivalent of two years of practical experience. A degree in mechanical engineering from a curriculum accredited by the Accreditation Board for Engineering and Technology college or university shall be the

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equivalent of four years of practical experience.

- (B) Application for examination by a person other than an employee of the department shall be in writing upon a form provided by the department. If the applicant's history and experience meet with the approval of the department, the applicant shall be given a written examination dealing with the construction, installation, operation, maintenance, or repair of boilers and appurtenances. If the applicant is successful in meeting all the requirements, a certificate of competency shall be issued by the department. An applicant who fails to pass the examination shall be permitted to take another written examination after the expiration of ninety days.

- ~~[(B)]~~ (C) Each applicant taking the examination for a certificate of competency, except those in the employ of the State, shall pay the fee set forth in table 220-2, in section 12-220-35. In the event an applicant fails to pass the examination, this fee shall be good for a period of six months during which a reexamination may be taken. The fee must accompany the application. The application shall be filed in the office of the department at least thirty days prior to the date of examination.

- ~~[(C)]~~ (D) Each boiler, pressure vessel, and pressure system inspector in the employ of the State shall pass the National Board examination and be issued a certificate of competency from the department during the probationary employment period. A commission from the National Board shall then be obtained by the department to enable the employee to become a qualified boiler inspector.

(b) Commissions to inspect shall be carried at all times by inspectors while engaged in the performance of inspectional duties. Commissions are non-transferable.

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(c) The certificate of competency and commissions issued to an inspector may be suspended by the director for cause and may be revoked after due investigation and recommendation by the department upon ten days notice to the inspector and to the inspector's employer. Cause for suspension or revocation shall be incompetency or untrustworthiness, wilful falsification of any matter or statement contained in the inspector's application or in the report of any inspections, or other sufficient reason. Prior to revocation, the holder of the certificate of competency or commission shall be entitled to a hearing before the director. A person whose commission or certificate of competency has been suspended or revoked, except for untrustworthiness, shall be entitled to apply to the department for reinstatement or, in the case of revocation, for a new examination and commission ninety days after the revocation.

(d) No person shall be authorized to act for the State either as an inspector or a special inspector who is directly interested in the manufacture, sale, or repair of any equipment or any appurtenance used on any equipment which is inspected pursuant to chapter 397, HRS." [Eff 7/6/98; am _____] (Auth: HRS §397-4) (Imp: HRS §§397-4, 397-6)

9. Section 12-220-20 is amended to read as follows:

"§12-220-20 Fees. (a) Departmental inspections fees.

- (1) The department shall charge and collect from the owner, user, lessee, contractor, or insurance company referred to in this chapter as the beneficiary, the fees listed in table 220-3 in section 12-220-35 for each inspection made by an inspector during regular working hours. The department shall charge and collect a permit processing fee as listed in table 220-3 in section 12-220-35 for each object inspected and [~~\$5~~] for each duplicate permit to operate requested.
- (2) When it is necessary to make a special trip to witness a test, an additional fee based upon the scale of fees for a permit inspection for the object under test shall be charged.
- (3) For all other inspections and services, the fee shall be [~~\$75~~]\$100 per hour but not less than [~~\$150~~]

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\$200 per occurrence during regular working hours and \$150 per hour but not less than [~~\$200~~] \$300 per occurrence when performed outside regular working hours at the request of the beneficiary.

- (4) Scheduled inspections delayed or canceled by the beneficiary, too late to prevent the arrival of the inspector on the premises shall be charged for in accordance with the scheduled fee for the type inspection; however, if the notice of cancellation or delay of a scheduled inspection is given in time to prevent the incurring of travel expenses, no fee will be charged.
- (5) The charge for a rescheduled inspection or a call back inspection to allow a boiler, pressure vessel, or pressure system, to operate may be at the scheduled fee for the type of inspection or for the expenses actually incurred, whichever is greater.
- (6) When an unscheduled inspection is made at the request of and for the benefit of an owner, user, contractor, or vendor, the sum of expenses incurred shall be charged in addition to the inspection fee.
- (7) Whenever the beneficiary of an inspection fails to pay the fees required under this section within sixty days after notification, the boiler, pressure vessel, or pressure system shall be tagged out of service and permit revoked and the beneficiary shall pay, in addition to the fees required, a penalty equal to fifty per cent of the fee. For the purpose of this section, the date of invoice shall be considered the date of notification. Upon payment of fees, the operating permit shall be reinstated.
- (8) Departmental reports of inspections for which expenses must be added to the basic fee shall be accompanied by an itemized account of the inspections made and the expenses incurred.
- (b)** Departmental installation permit and test fees.
 - (1) A group of pressure vessels, such as the rolls of a paper machine or dryers operating as a single machine or unit, shall be considered as one pressure vessel.
 - (2) The department shall, before issuance of a permit for installing, constructing, re-constructing, or relocating, charge and collect a fee for each

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- object in accordance with table 220-1 in section 12-220-35.
- (3) The department shall, before issuance of authorization for a repair, or alteration, charge and collect a fee for each object in accordance with table 220-1 in section 12-220-35.
 - (4) For each instance requiring an installation permit fee, the department shall provide:
 - (A) The plan review, inspection and witnessing of the acceptance test on the installation and one additional followup inspection; the followup inspection shall be at the convenience of the department. Any additional inspections required for final acceptance will be at the expense of the beneficiary of the inspection and may be at the convenience of the beneficiary provided all the expenses incurred are paid by the beneficiary and forty-eight hours advance notice is given to the department;
 - (B) The processing and issuance of the temporary permit to operate; and
 - (C) The processing and issuance of the final permit.
 - (5) Fees in accordance with table 220-1 in section 12-220-35 or the fee in effect on the application submittal date shall be charged and collected for all installation permits issued. ~~[Where the inspection agency of the boiler or pressure vessel listed on the permit application is other than the State of Hawaii, the installation fee shall be reduced to one half of the regular fee.]~~ Failure to obtain a permit prior to completion of the installation of a boiler or pressure vessel will double the permit fee in addition to penalties.
 - (6) For more than one additional inspection for final acceptance, the department may charge and collect from the beneficiary an additional amount in accordance with subsection (a) (3).
- (c) Boiler inspector examination and license fees, according to table 220-2 in section 12-220-35." [Eff

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7/6/98; _____] (Auth: HRS §397-4) (Imp: HRS
§397-5)

10. Section 12-220-22 is amended to read as follows:

"§12-220-22 Violations and penalties. (a) The director may assess all civil penalties provided in this section, giving due respect to the gravity of the violation, the good faith of the owner, user, consultant, contractor, or vendor, and the history of previous violations.

(b) Violations.

- (1) Any owner, user, consultant, contractor, or vendor who violates chapter 397, HRS, or any safety standards and codes adopted pursuant to chapter 91, HRS, or who violates or fails to comply with any order made under or by virtue of chapter 397, HRS, or who defaces, displaces, destroys, damages, or removes without the authority of the department any safety device, safeguard, notice, order, or warning required by chapter 397, HRS, standards, or codes, shall be assessed a civil penalty of not more than [~~\$1,000~~]\$10,000 for each such violation.
- (2) Each day a violation continues shall constitute a separate violation except during an abatement period.

(c) Discrepancies and penalties.

- (1) Any conditions found not in conformance with applicable standards or codes, adopted pursuant to chapter 91, HRS, shall be regarded as discrepancies and shall be made known to the owner, user, consultant, contractor, or vendor by letter or written "order to correct" or both. All discrepancies shall be satisfactorily resolved as soon as possible. When, in the opinion of the department, a discrepancy constitutes a potentially serious or imminent hazard, it may prohibit the use of the equipment until the condition is abated. Failure to abate unsafe conditions or failure to correct discrepancies within the time prescribed shall be a violation subject to the civil penalties prescribed in this section.

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(2) Assessing penalties.

(A) Consideration shall be given to the gravity of the violation. For a violation that could not or probably would not result in serious harm to life or property, the penalty may be reduced by forty per cent.

(B) Consideration shall be given to the good faith of the owner, user, consultant, contractor, or vendor. For immediate correction or for attempts to make corrections or abate hazards that have been thwarted by conditions beyond the control of the owner, user, consultant, contractor, or vendor, the penalty may be reduced by forty per cent.

(C) Consideration shall be given for the history of previous violations. For few or no previous violations by the owner, user, consultant, contractor, or vendor, the penalty may be reduced by twenty per cent.

(d) Anyone who knowingly makes a false statement on any document required by chapter 397, HRS, shall, upon conviction, be punished by fine or imprisonment or both. Any evidence suggesting that a false statement may have been made shall be immediately referred to the director, who shall consult with the attorney general for purposes of initiating appropriate action." [Eff 7/6/98; am _____]
(Auth:HRS §397-4) (Imp: HRS §397-8)

11. Section 12-220-35 is amended to read as follows:

§12-220-35. Appendix.

"TABLE 220-1

**BOILER AND PRESSURE VESSEL INSTALLATION REPAIR
or ALTERATION PERMIT FEES**

[July 1, 1996] July 1, 2012

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Installation Permits are based on the following per object:
Power boilers (shall pass a hydrostatic test unless indicated)

<u>Miniature electric (no hydro required)</u>	<u>. . . . \$ 190</u>
<u>Less than 500 square feet of heating surface.</u>	<u>. . . 250</u>
<u>Greater than and equal to 500 and less than and</u>	
<u>equal to 3000 square feet of heating surface.</u>	<u>. . 400</u>
<u>Greater than 3000 square feet of heating surface.</u>	<u>750</u>
Heating boilers	[150] 190
Retrofit.	160
Pressure vessels.	[135] 175
Retrofit.	130
Sterilizers and steam kettles	
[fired] (<u>Fired and electrically heated</u>)	[120] 150
Retrofit.	110
[Review of shops and facilities for the issuance of	
National Board or ASME Certificates	
of Authorization	1,060]
Repair [and/or Alteration] Application Fee.	[100] 200
Alteration Application Fee.500

TABLE 220-2
EXAMINATION AND LICENSE FEES
[~~July 1, 1996~~] July 1, 2012

Boiler inspector's certificate of competency examination	\$ [250] 300
<u>Review of shops and facilities for the issuance of National Board or ASME</u>	
<u>Certificates of Authorization.</u>	<u>1,500</u>
<u>Review of shops and facilities for the issuance of</u>	
<u>NBEP Certificate of Authorization.</u>	<u>.750</u>
Boiler inspector's Hawaii Commission [initial].	[50] 75
[Boiler inspector's Hawaii Commission renewal	35]

TABLE 220-3
INTERNAL AND EXTERNAL INSPECTIONS FEES
[~~July 1, 1996~~] July 1, 2012

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Power boilers	
Without manholes\$[80] 150
With manholes but not over [4,000] 3,000 square feet	
Of heating surface	[100]180
Over [4,000 square feet heating surface] 3,000 but not	
over 10,000 square feet of heating surface	[200]260
Over 10,000 square feet of heating surface	[250]450
Heating boilers	
Hot water supply	[70] 130
Steam and water heating without manholes . . .	[80] 110
Steam over 100 but not over 500 square feet	
of heating surface.	140
All with manholes and steam over 500 square feet of heating	
surface.	[90]170
Pressure vessels [Fees are based on the	
product of the overall length and the	
maximum width or diameter of the vessel	
expressed in square feet	
Fifty square feet area or less	45
For each additional 100 square feet	
or portion thereof	45
 Maximum inspection fee for any single vessel.	250]
Routine Inspection	65
Internal for air or water service.	130
Ultrasonic testing.	130
[Sterilizers and steam kettles	
Fired and electrically heated	45]
[Review of shops and facilities for the issuance of National	
Board or ASME Certificates	
for their renewal.	1,060]
Boiler inspector fee per hour.	100
Hydrostatic test	300
School specials (non-code) objects.	10
Processing	
Report and permit processing	[10]25
Permit repint.	20
Signed permit card (old issue).	10
Owner portal.	5
[Eff 7/6/98; Am _____] (Auth: HRS §397-4) (Imp: HRS	
§397-4)	

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12. Section 12-221-17 is amended to read as follows:

"§12-221-17 Welding. (a) All welding performed on boilers, pressure vessels, or piping covered by this chapter shall be performed in accordance with the applicable sections of the ASME Boiler and Pressure Vessel Code and [~~ANSI/ASME B31.1f.~~] ASME B31.1.

(b) Each employer or self-employed welder shall record in detail and shall qualify the procedure specifications for any welding procedures. All welding performed in qualifying a welding procedure shall be done in accordance with the procedure qualification.

(c) Each welder and welding operator who welds on vessels or piping covered by this chapter shall pass a test described in the applicable code for performance qualification. The essential variables and test results obtained by each welder and welder operator shall be recorded in the performance specification. Each employer or self-employed welder shall maintain a record of procedures, including the essential variables, under which welders and welder operators are examined, and the results of the examination.

(d) Forms for recording the necessary information for welding procedure specifications (WPS, QW-200.1), procedure qualification records (PQR, QW-200.2), and welder performance qualifications (WPQ, QW-301) shall be those suggested in the applicable codes noted in subsection (a) or other types approved by the department. These records shall be certified by the employers of contracted welders and shall be accessible to the authorized inspectors. [Eff. 12/6/82; am 12/8/86; am and comp 12/6/90; am _____] (Auth: HRS §397-4) (Imp: HRS §397-4)

13. §12-221-19 is added to read as follows:

"§12-221-19 Installation Requirements. For all new installations of boilers and pressure vessels the requirements in the National Board Inspection Code, Part 1 shall be followed." [Eff. _____] (Auth: HRS §397-?)

14. Section 12-222-2 is amended to read as follows:

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"§12-222-2 Maximum allowable working pressure for standard boilers. (a) The maximum allowable working pressure for standard boilers shall be determined in accordance with the applicable provisions of the edition of the ASME code under which they were constructed and stamped.

(b) Power boilers designed and stamped in accordance with Section I of the ASME Code, if trimmed for use as low pressure steam boilers, shall be inspected internally and externally on a power boiler frequency. The steam supply piping, blowdown piping, and safety valve discharge piping shall be installed in accordance with ASME B31.1."

[Eff. 12/6/82; comp 12/6/90; _____] (Auth: HRS §397-4) (Imp: HRS §397-4)

15. Section 12-222-3 is amended to read as follows:

"§12-222-3 Safety valves. (a) The use of weighted-lever safety valves or safety valves having either the seat or disk of cast iron is prohibited; valves of this type of construction shall be replaced by direct, spring-loaded, pop-type valves that conform to the requirements of the ASME Code Section I and are stamped in accordance with section 12-221-6. These requirements are briefly summarized below.

- (1) Each boiler shall have at least one ASME and National Board certified safety valve. If it has more than 500 square feet of water-heating surface, or an electric power input of more than 1100 kw, it shall have two or more safety valves of the same type.
- (2) The valve or valves shall be connected to the boiler, independent of any other steam connection, and attached as close as possible to the boiler, without unnecessary intervening pipe or fittings. Where alteration is required to conform to this requirement, owners or users shall be allowed reasonable time in which to complete the work as permitted by the department.
- (3) No valves of any description shall be placed between the safety valve and the boiler nor on the discharge pipe, if used, between the safety valve and the atmosphere. When a discharge pipe is used, it shall be at least full size of the safety-valve

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discharge and fitted with an open drain to prevent water lodging in the upper part of the safety valve or in the discharge pipe. Sectional areas of a discharge pipe shall not be less than the full area of the valve outlets discharging therein and the discharge pipe shall be as short and straight as possible and so arranged as to avoid undue stresses on the valve or valves. When an elbow is placed on a safety-valve discharge pipe, it shall be located close to the safety-valve outlet or the discharge pipe shall be anchored and supported securely. When the umbrella or drip pan type of connection is used, the discharge piping shall be so designed as to prevent binding due to expansion. All safety-valve discharges shall be so located or piped as to be carried clear from walkways or platforms.

- (4) The safety-valve capacity of each boiler shall be such that the safety valve or valves will discharge all the steam that can be generated by the boiler without allowing the pressure to rise more than 6 per cent above the highest pressure to which any valve is set, and in no case to more than 6 per cent above the maximum allowable working pressure. Table 221-1 in section 12-221-5 may be used to determine the required total capacity.
- (5) One or more safety valves on each boiler shall be set at or below the maximum allowable working pressure. The remaining valves may be set within a range of 3 per cent above the maximum allowable working pressure, but the range of setting of all the safety valves on a boiler shall not exceed 10 per cent of the highest pressure to which any valve is set.
- (6) When two or more boilers, operating at different pressures, and safety-valve settings are interconnected, the lower pressure boilers or interconnected piping shall be equipped with safety valves of sufficient capacity to prevent overpressure, considering the maximum generating capacity of all boilers.

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- (7) When a boiler is fed from a water source other than a feed pump or injector, the maximum safety-valve setting on the boiler shall be no more than 80 per cent of the minimum pressure of the source.

(b) ~~[For the detailed requirements, refer to ASME Code Section I.]~~ When a new boiler is installed form P-7, Manufacturer's Data Report for Pressure Relief Valves, or P-8, Manufacturer's or Assembler's Certificate of Conformance for Pressure Relief Valves, as required by the provisions of the ASME Code rules for power boilers, shall be submitted along with the manufacturers' data on the power boiler."

[Eff. 12/6/82; am 12/19/83; am and comp 12/6/90; am _____] (Auth: HRS §397-4) (Imp: HRS §397-4)

15. Section 12-222-10 is amended to read as follows:

"§12-222-10 Attendance on power boilers. (a) Power boilers, waste heat boilers, and high-temperature water boilers subject to this chapter shall not be left in operation unattended by a competent attendant for a period of time longer than it will take the water level to drop from a normal operating level to the lowest permissible water level, as indicated by the water gauge glass or by indicating devices or recorders, when the feed water is shut off and the boiler is forced to its maximum capacity, unless all of the following are complied with where applicable.

- (1) The boiler is equipped with ~~[an audible alarm]~~ a strobe or flashing light that will operate when the water reaches the lowest permissible operating level or, for boilers having no fixed steam or water line, when the highest permissible operating temperature is reached. ~~The [audible alarm shall be sufficiently loud or]~~ strobe or flashing light shall be so located that it can be plainly [heard] seen at the most remote point from the boiler at which the attendant is required to work. Audible alarms, when used, shall be distinctly audible above the ambient noise level.
- (2) The boiler is equipped with two low water safety devices with separate water connections to the boiler that will shut off the fuel to the burner or

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burners when the water reaches the lowest permissible operating level or, for boilers having no fixed steam or water line, when the highest permissible operating temperature is reached. These devices shall require manual resetting unless the burner is equipped with a full safety pilot control.

- (3) A competent attendant personally checks the operation of the boiler, the necessary auxiliaries, and the water level of the boiler at such intervals, not exceeding 60 minutes, as necessary to insure the safe operation of the boiler. The operation of the automatic water level controls shall be tested such that fuel to the burner will be shut off at the beginning of each daily period of operation and at intervals not to exceed 12 operating hours. A record of each inspection and check of controls shall be maintained and available to the inspector for a period of six months.
- (4) There is a conspicuous and readily accessible safety disconnect switch located adjacent to the boiler room entrance or, in the situation where the boiler is located outside, in the immediate vicinity of the boiler which, when operated, will cut off all power to the boiler and cause it to be shut down in a safe manner. Immediately adjacent to the disconnect device there shall be posted a sign of arresting size and design directing the observer to use the device for shutting down the boiler in event of emergency, such as observing any unsafe condition or functioning of the boiler or its appurtenances or any condition or function of the boiler which is unusual or which is, in the observer's opinion, potentially hazardous.

(b) A competent attendant means a person who is familiar with the boiler to be operated and who has been registered ~~[with the department]~~ by the owner or user~~[.]~~, and has been certified by a curriculum accredited college, university, technical school, or organization serving the boiler industry.

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(c) The minimum standards to be met for an attendant to be competent include, but are not limited to the following, as detailed in the ASME Code Section VII.

(1) The ability to:

- (A) Explain the function and operation of all controls on the boiler; and
- (B) Light off the boiler in a safe manner;

(2) The knowledge of:

- (A) All possible methods of feeding water to the boiler;
- (B) How to blow down the boiler in a safe manner;
- (C) What would happen and what to do in the event the water in the boiler was carried too high or too low; and
- (D) How to shut down the boiler or boilers in a safe manner.

(3) Access to a hard copy of the ASME Code Section VII and ASME CSD-1, or a CD or other data storage device which contains both publications, or electronic media and the ability to demonstrate familiarity with the data and its retrieval."

[Eff. 12/5/82; am 12/19/83; am and comp 12/6/90; am _____] (Auth: HRS §397-4) (Imp: HRS §397-4)

16. Section 12-222-13 is amended to read as follows:

"§12-222-13 Controls and safety devices for automatically fired boilers. The Provisions of [~~ASME CSD-1-1988~~] ASME CSD-1 shall apply to the types of controls and safety devices for automatically-fired, high-pressure steam boilers and/or forced circulation boilers." [Eff. And comp 12/6/90; am _____] (Auth: HRS §397-4) (Imp: HRS §397-4)

17. Section 12-223-1 is amended to read as follows:

"§12-223-1 Standard heating boilers. The maximum allowable working pressure of standard heating boilers shall in

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no case exceed the pressure indicated by the manufacturer's identification stamped or cast on the boiler or on a plate secured to it. Boilers constructed to the Canadian Standard CSA B51 shall be registered with the National Board.

[Eff. 12/6/82; comp 12/6/90; am _____] (Auth: HRS §397-4) (Imp: HRS §397-4)

18. Section 12-223-14 is amended to read as follows:

"§12-223-14 Controls and safety devices. The requirements of ASME CSD-1 controls and safety devices for automatically fired boilers shall apply." [Eff 7/6/98; am _____] (Auth: HRS §397-4) (Imp: HRS §397-4)

19. Section 12-223-15 is added to read as follows:

"§12-223-15 Pool heaters. All pool heaters exceeding a heat input of 200,000 btu shall be constructed in accordance with Section IV of the ASME Code and installed per the rules of these standards. All heaters shall be provided with isolating valves, a drain valve, a pressure relief valve, and temperature and pressure gauge." [Eff _____] (Auth: §397-4)

20. Section 12-223-15 is added to read as follows:

"§12-223-16 Inspection frequency. All low pressure steam boilers with a heat input exceeding 400,000 btu, or a heating surface greater than 100 square feet, or having a manway shall be inspected on a power boiler frequency." [Eff _____] (Auth: §397-4)

21. Section 12-224-1 is amended to read as follows:

§12-224-1 Maximum allowable working pressure for standard pressure vessels. The maximum allowable working pressure for standard pressure vessels shall be determined in

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accordance with the applicable provisions of the edition of the ASME Code under which they were constructed and stamped. Pressure vessels constructed to the Canadian Standard CSA B51 shall be registered with the National Board. [Eff. 12/6/82; comp 12/6/90; am _____] (Auth: HRS §397-4) (Imp: HRS §397-4)

22. Section 12-224-3 is amended to read as follows:

"§12-224-3 Overpressure protection. (a) All pressure vessels within the scope of this chapter irrespective of size or pressure shall be provided with protective devices in accordance with the ASME Code, Section VIII. When relief valves, safety valves, or safety-relief valves are used, they shall comply with section 12-221-6.

(b) All Pressure Vessels for Human Occupancy shall have an isolation valve mounted between the safety valve and the vessel it serves per ASME PVHO 1." [Eff. 12/6/82; am and comp 12/6/90; am _____] (Auth: HRS §397-4) (Imp: HRS §397-4)

23. Section 12-225-2 is amended to read as follows:

"§12-225-2 Geothermal energy systems. (a) Geothermal energy systems operating at a pressure of more than 15 PSI are subject to the provisions of this chapter. They shall be designed and erected in accordance with all applicable requirements for design, materials, fabrication, erection, test, and inspection of power piping systems included in the [ANSI/ASME B31.1.] ASME B31.1.

(b) Boiler external piping as defined in section 12-225-1 shall be provided with data reports, inspection, and stamping as required by Section I of the ASME Code. The quality control system requirements of Section I of the ASME Code shall apply. All other piping shall meet the requirements of [ANSI/ASME B31.1-1989] ASME B31.1 and be provided with data reports by an authorized inspector.

(c) Piping for which inspection and stamping is required as determined in accordance with subsection (b) shall be inspected during construction and after completion and, at the opinion of the authorized inspector, at such stages of the work

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as he may designate. Each assembler or erector is required to arrange for the services of authorized inspectors as defined in Section I PG-91 of the ASME Code.

- (1) Certification by stamping and data reports, where required, shall be as per Section I Part PG Rules 104, 105, and 109 through 112 of the ASME Code.
- (2) All data reports shall be filed with the department's chief boiler inspector.
- (3) All pressure vessels forming a part of a geothermal energy system shall be fabricated in accordance with the provisions of Section I or Section VIII Division 1 or Division 2, as applicable, of the ASME Code by a manufacturer who is in possession of the appropriate symbol stamp, a valid certificate of authorization, and National Board registered.
- (4) When pressure vessels having a manhole opening form part of a geothermal pressure system, the piping-up stream from the pressure vessel shall be fitted with two stop valves having an ample free-blow drain between them. In determining the existence of two stop valves, the well head stop valve shall not be counted.
- (5) When multiple geothermal wells supply the same pressure system, all pressure vessels having a manhole opening shall be fitted on both the up stream side and the down stream side with two stop valves having an ample free-blow drain between them.
- (6) Plans and material specifications for geothermal energy systems within the scope of this code shall be submitted to the department's chief boiler inspector, prior to commencement of work, for review." [Eff. 8/5/88; am and comp 12/6/9; am _____] (Auth: HRS §397-4) (Imp: HRS §397-4)

24. Material, except source notes, to be repealed is bracketed. New material is underscored.

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25. Additions to update source notes to reflect these amendments are not underscored.

26. These amendments to chapters 12-220, 221, 222, 223, 224 and 225, Hawaii Administrative Rules, shall take effect ten days after filing with the Office of the Lieutenant Governor.

I certify that the foregoing are copies of the rules, drafted in the Ramseyer format pursuant to the requirements of section 91-4.1, Hawaii Revised Statutes, which were adopted on (date) _____, and filed with the Office of the Lieutenant Governor.



DWIGHT TAKAMINE

Department of Labor and
Industrial Relations

Approved as to Form:



Deputy Attorney General